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Preface

Dear reader,

I am pleased to present the 2008 edition of the Eurostat regional yearbook, which gives an overview of the most recent developments in the regions of the European Union, with its current 27 Member States, as well as in the candidate countries and EFTA countries.

We have again selected themes that we think will show you the most interesting facets of development in the economic, social and demographic fields in Europe's regions. We are also pleased to include a contribution from our colleagues at the Commission's Directorate-General for Regional Policy for the second year running. This time the chapter is about 'Sectoral productivity' and it examines how productivity in different business sectors differs between the EU's regions.

Regional policy programmes initiated last year under the EU's new cohesion policy are now well under way and we hope that this publication will give some flavour of the progress being made in regional cohesion throughout the EU. We have also included some of the most recent results from the Urban Audit exercise, a data collection that compiles a great deal of statistical information on Europe's cities.

We are progressively developing the range of regional indicators available and will hopefully be able to include these in our choice of topics in future editions, as data availability and quality allow.

I wish you a stimulating read.

Hervé Carré
Director-General, Eurostat

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- **Household accounts**: Andreas Krüger (Unit C.2 at Eurostat: National accounts — production)
- **Structural business statistics**: Ulf Johansson (Unit G.1 at Eurostat: Structural business statistics)
- **Labour market**: Pedro Ferreira (Unit D.2 at Eurostat: Regional indicators and geographical information)
- **Sectoral productivity**: Zuzana Gáková (Unit C.3 at the Directorate-General for Regional Policy: Economic and Quantitative Analysis, Additionality)
- **Labour costs**: Simone Casali (Unit F.2 at Eurostat: Labour market statistics)
- **Transport**: Anna Bialas-Motyl and Anastassia Vakalopoulou (Unit G.5 at Eurostat: Transport statistics)
- **Tourism**: Ulrich Spörel (Unit F.6 at Eurostat: Information society and tourism statistics)
- **Science, technology and innovation**: Bernard Felix and Tomas Meri (Unit F4 at Eurostat: Education, science and culture statistics)
- **Health**: Tomasz Urbanski (Unit F.5 at Eurostat: Health and food safety statistics)
- **Agriculture**: Garry Mahon (Unit E.2 at Eurostat: Agricultural and fisheries statistics)

This publication was edited and coordinated by Åsa Önnerfors (Unit D.2 at Eurostat: Regional indicators and geographical information) with the help of Pavel Bořkovec (Unit B.6 at Eurostat: Dissemination). Baudouin Quennery (Unit D.2) produced all the statistical maps.

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Contents

Introduction

Regional statistics give more detailed information

Eurostat, the statistical office of the European Communities, collects data on a range of different statistical topics, mainly from the 27 Member States of the European Union, but also from the three candidate countries (Croatia, the former Yugoslav Republic of Macedonia, and Turkey) and from the four EFTA countries (Iceland, Liechtenstein, Norway and Switzerland). The statistical data are often only collected at national level, but very many statistical fields also have statistics at regional level, which gives us a more complete picture.

This aim of this publication, the *Eurostat regional yearbook 2008*, is to give you detailed information on life in the European regions today. Looking at the regions of Europe under the magnifying glass allows the authors of the 13 different chapters to make an in-depth analysis of a large variety of statistical domains. We very much hope you will enjoy reading it!

The first chapter is about population statistics (demography), because population data form the basis for all other statistics. Many other statistical indicators are divided by the population figures, thus resulting in data with the unit expressed in terms of 'per inhabitant'. Therefore, we start the first chapter by presenting some basic facts about how the population is spread over the regions in Europe, providing birth and death rates, migration patterns and age distribution.

The second chapter, on urban statistics, is based on the Urban Audit data collection and it presents data on a range of different topics from all European capitals and from many other large European cities. As a large proportion of EU citizens live in these cities, it should be a topic that is interesting and directly relevant for many people.

The other chapters can be divided into four different themes.

The first concerns economic or financial indicators: gross domestic product (GDP), household accounts and structural business statistics. Economic cohesion is one of the main goals in EU policy and, one might say, the engine for all other policies. In particular the chapter on GDP gives a very good idea of the situation in the European Union today.

Labour market indicators form the second group of themes in this publication, containing a basic chapter on the labour market, and also introducing two totally new subjects for the *Eurostat regional yearbook*; sectoral productivity, written by a subject specialist from the Directorate-General for Regional Policy, and labour costs, where the regional differences in labour costs per hour are analysed.

The theme for the third group of chapters is more general and concerns the everyday life of most European citizens. Transport and tourism both focus on the mobility of people, while science, technology and innovation is often seen as one of the main cornerstones in the new Lisbon strategy for growth and jobs.

Well-being in general is the theme for the last two chapters; statistics on health are a welcome reappearance this year, focusing on the main causes of death and on the density of healthcare staff in the European regions; the chapter on agriculture this year concerns animal-rearing, mainly regarding pigs, sheep and cows.

The NUTS classification

All statistics at regional level within the EU are based on the nomenclature of territorial units for statistics (NUTS). The NUTS classification has been used for regional statistics for many decades, and has always formed the basis for regional funding policy. It was only in 2003, though, that NUTS acquired a legal basis, when the NUTS regulation was adopted by the Parliament and the Council ([1]).

Whenever new Member States join the EU, the NUTS regulation is of course amended to include the regional classification in those countries. This was the case in 2004, when the EU took in 10 new Member States, and in 2007 when it expanded to include Bulgaria and Romania.

The NUTS regulation provides for a review to be conducted every three years whereby the regional classification can be changed and adapted to new administrative boundaries or economic circumstances. In 2006, this exercise took place for the first time, and the results of these changes to the NUTS classification have now been valid since 1 January 2008. Most territorial changes are at NUTS level 3, affecting 11 countries, while four countries had changes made at NUTS level 2 and only one country at NUTS level 1.

The main changes in this latest revision of the NUTS classification are the following: Denmark introduced new NUTS 2 regions and revised the existing NUTS 3 regions following a substantial

([1]) More information on the NUTS classification can be found on the Internet (http://ec.europa.eu/eurostat/ramon/nuts/splash_regions.html).

administrative regional reform. In one German region, Sachsen-Anhalt, three different NUTS 2 regions were merged into just one NUTS 2 region. Slovenia introduced two new NUTS 2 regions where it had only one previously. In the United Kingdom, more specifically in north-eastern Scotland, a boundary shift at both NUTS 2 and 3 levels had the effect of creating new regions. Sweden introduced NUTS 1 regions for the first time due to the size of the country. For more detailed information on the most recent NUTS changes, please consult the Eurostat website.

Since these NUTS changes were introduced only on 1 January 2008 and the statistical data for all the chapters had already been extracted by the beginning of this year, you will find that regional data, especially for Denmark and Slovenia, are missing or have been replaced with national values on many of the statistical maps. The regional data availability for these two countries will have hopefully improved for next year's publication.

As a rule regional data by NUTS 2 regions are displayed and analysed in the *Eurostat regional yearbook 2008*, but there is one exception. Regarding labour costs, Eurostat only collects data at NUTS level 1 and therefore in that chapter the data are based on NUTS 1 regions instead.

Please note that some of the Member States have a relatively small population and they are therefore not divided into more than one NUTS 2 region. Thus, for these countries the NUTS 2 value is exactly the same as the national value. Following the latest revision of the NUTS classification this now applies to six Member States (Estonia, Cyprus, Latvia, Lithuania, Luxembourg and Malta), one candidate country (the former Yugoslav Republic of Macedonia), and two EFTA countries (Iceland and Liechtenstein): in all these cases the whole country consists of one single NUTS 2 region.

A folding map accompanies this publication on the inside of the cover and it shows all the regions at NUTS level 2 in the 27 Member States of the European Union (EU-27) and the corresponding statistical regions at level 2 in the candidate and EFTA countries. In the annex you will find the full list of codes and names of these regions. This will help you to locate a specific region geographically on the map.

Coverage

The *Eurostat regional yearbook 2008* mainly contains statistics from the 27 Member States of the European Union, but when available also from the three candidate countries: Croatia, the former Yugoslav Republic of Macedonia, and Turkey; and from the four EFTA countries: Iceland, Liechtenstein, Norway and Switzerland.

Regions in the candidate countries and the EFTA countries are called statistical regions and they follow the same rules as the NUTS regions in the European Union, except that there is no legal base. Data from the candidate and EFTA countries are not yet available in the Eurostat database for some policy areas, but the data availability situation is constantly improving, and we hope to have even better coverage in the near future.

More regional information

Under the theme 'General and regional statistics' on the Eurostat website you will find tables with statistics on both 'Regions' and the 'Urban Audit' with more detailed time series (some of them going back as far as 1970) and with more detailed statistics than contained in this yearbook. You will also find a number of indicators at NUTS level 3 (such as area, demography, gross domestic product and labour market data). This is important since some of the countries covered are not divided into NUTS 2 regions, as mentioned above.

For more detailed information on the contents of the regional and urban databases please consult the Eurostat publication *European regional and urban statistics — Reference guide — 2008 edition*, which you can download free of charge from the Eurostat website. The specific data used for producing the maps and other illustrations in this publication can also be found as Excel tables on the Eurostat website.

9

Transport

Introduction

Roads, railway lines and inland waterways, as well as seaports, airports and railway stations, form the basic transport infrastructure in the European regions. A modern transport infrastructure of a high standard is the basis for the mobility of goods and passengers and thus essential both for regional economic development and for the creation of an internal European market.

In keeping with the high importance of inland transport infrastructure for the economic development of the European regions, investments in road and rail infrastructure account for a major share of the Community's regional budgets.

The aim of regional transport statistics is to describe regions in terms of a set of transport indicators, and also to quantify the flows of goods and passengers between, within and through regions. In the 2008 edition of the Eurostat regional yearbook, the analysis of regional transport infrastructure provision is accompanied by an analysis of the regional distribution of road fatalities and a sharper focus on the top European regions with respect to the dynamic growth of air transport.

This chapter is divided into three main sections. The first of these sections deals with the regional distribution of motorways and railway lines within Europe, thus helping to identify the regions with comparatively high and low infrastructure densities. It reveals regional patterns of infrastructure provision, as well as differences between EU Member States and peripheral and central countries. The second section investigates the regional distribution of road fatalities. While the overall number of fatal road accidents in the European Union has fallen since 1991, significant regional disparities remain, providing an insight into the conditions that favour low fatality rates in road transport. The third section reviews the top 30 European regions in terms of air passenger and air freight transport and the growth of these regions between 2003 and 2006.

Transport infrastructure

The major importance of modern high-capacity transport links and hubs for all modes of transport for European economic integration has been recognised by the Union and its Member States via the definition of major trans-European transport axes within the framework of the trans-European networks (TEN). These have been a key component for the development of the single market and for promoting economic and social cohesion within the EU.

The implementation of these priority transport axes involves the enhancement and extension of existing regional transport infrastructure to include the trans-European axes that have been identified. However, the removal of transport bottlenecks, particularly on cross-border sections of the networks, is also important for the regions' improved accessibility. Enhancing the capacity of cross-border links has traditionally been neglected by nationally focused transport planning concepts, and so the EU is putting particular emphasis on their future development. In many cases transport bottlenecks are caused not only by an insufficient provision of physical infrastructure, but also by organisational constraints. This is especially true of rail transport, where the inherited organisation of the national railway companies, each with their own technical standards, hampers international traffic flows. However, in recent years, progress has been achieved. The extension of the Schengen area to include the eastern European countries in 2007 was a major step in terms of the mobility of goods and passengers on the roads.

From a regional perspective, an extensive network of roads, motorways and railway links is a prerequisite for economic development and interregional competitiveness.

Map 9.1 shows the density of the motorway network in the European NUTS 2 regions in 2006, expressed as kilometres of motorway per 1 000 km^2.

- In general, the density of the motorway network is closely correlated with population density and thus with the degree of urbanisation. The densest motorway networks can therefore be found in the Netherlands, Belgium, the western regions of Germany and the UK. As regards the motorway infrastructure at country level, the Netherlands has the highest density with 63 km/1 000 km^2, followed by Luxembourg (57 km/1 000 km^2). Trailing some distance behind Luxembourg, in third place, comes Germany with 35 km/1 000 km^2, followed by Slovenia, Portugal and Denmark. The countries with the lowest motorway density are Romania and Poland (2 km/1 000 km^2), and also Bulgaria, Finland, Sweden, Ireland, the Baltic States, the Czech Republic, Hungary and Slovakia, with numbers well below 10 km/1 000 km^2.
- A closer view reveals that the highest density of motorways is to be found around European capitals and other major cities, and in major

industrial conurbations. Looking at European history, it is fair to say that, historically, the motorway infrastructure (in these specific regions) was a product of regional development rather than the driving force behind it.

- Important industrialised areas with high motorway densities include the German regions in the 'Ruhrgebiet' (Düsseldorf: 118 km/1 000 km²) and the 'Rhein-Main-Region' (Köln: 76 km/1 000 km², Darmstadt: 64 km/1 000 km²) as well as the north-western part of England, with Greater Manchester (140 km/1 000 km²) as the centre, and the densely populated 'Randstad' in the western part of the Netherlands (Utrecht: 122 km/1 000 km², Zuid-Holland: 103 km/1 000 km²).
- Most European capitals and large cities are surrounded by a ring of motorways in order to meet the high road transport demand originating from these metropolitan areas. The densest motorway networks can be found around the capitals: Lisboa (220 km/1 000 km²), Wien (108 km/1 000 km²), Madrid (93 km/1 000 km²), Berlin (82 km/1 000 km²) and Paris (Île-de-France: 51 km/1 000 km²). Since the motorways are concentrated in a ring close to the cities, the reported density decreases with the area of the respective NUTS 2 region. As a result, the reported motorway density for the small NUTS 2 region of Lisboa is higher than for the much larger NUTS 2 region of Île-de-France, even though the motorway network of Paris is actually larger.
- High motorways densities are also found around the major seaports of northern Europe: The motorway densities of the NUTS 2 regions of Bremen (176 km/1 000 km²) with the port Bremerhaven, Hamburg (107 km/1 000 km²), Zuid-Holland with the port of Rotterdam (103 km/1 000 km²) and Prov. Antwerpen (76 km/1 000 km²) with the port of Antwerpen are among the highest of all European regions.
- Another reason for the higher density of the motorway network in central European countries such as Germany is the similarly high and growing volume of transit traffic in freight transport.
- In addition to the regional structure described above, it is noticeable that coastal regions with a substantial tourism industry have denser motorway networks than other peripheral regions. This is especially true for Spain (Pais Vasco: 60 km/1 000 km²) and for Italy, with Liguria (69 km/1 000 km²) being the peripheral coastal region with the densest motorway network in Europe. Not surprisingly, the supply of motorways on islands is generally low, since islands cannot be reached directly by road transport, and they rely instead on sea or air for access. However, the motorway density of the Canarias — at 34 km/1 000 km² — is still relatively high.
- While ready accessibility for goods and passengers may be an important factor in shaping a region's ability to compete, this does not mean that regions with a high GDP necessarily have a high density of motorways in all cases. While a high regional accessibility is generally a prerequisite for a region's economic performance, this can likewise be achieved by means of transport other than road, such as air and rail.

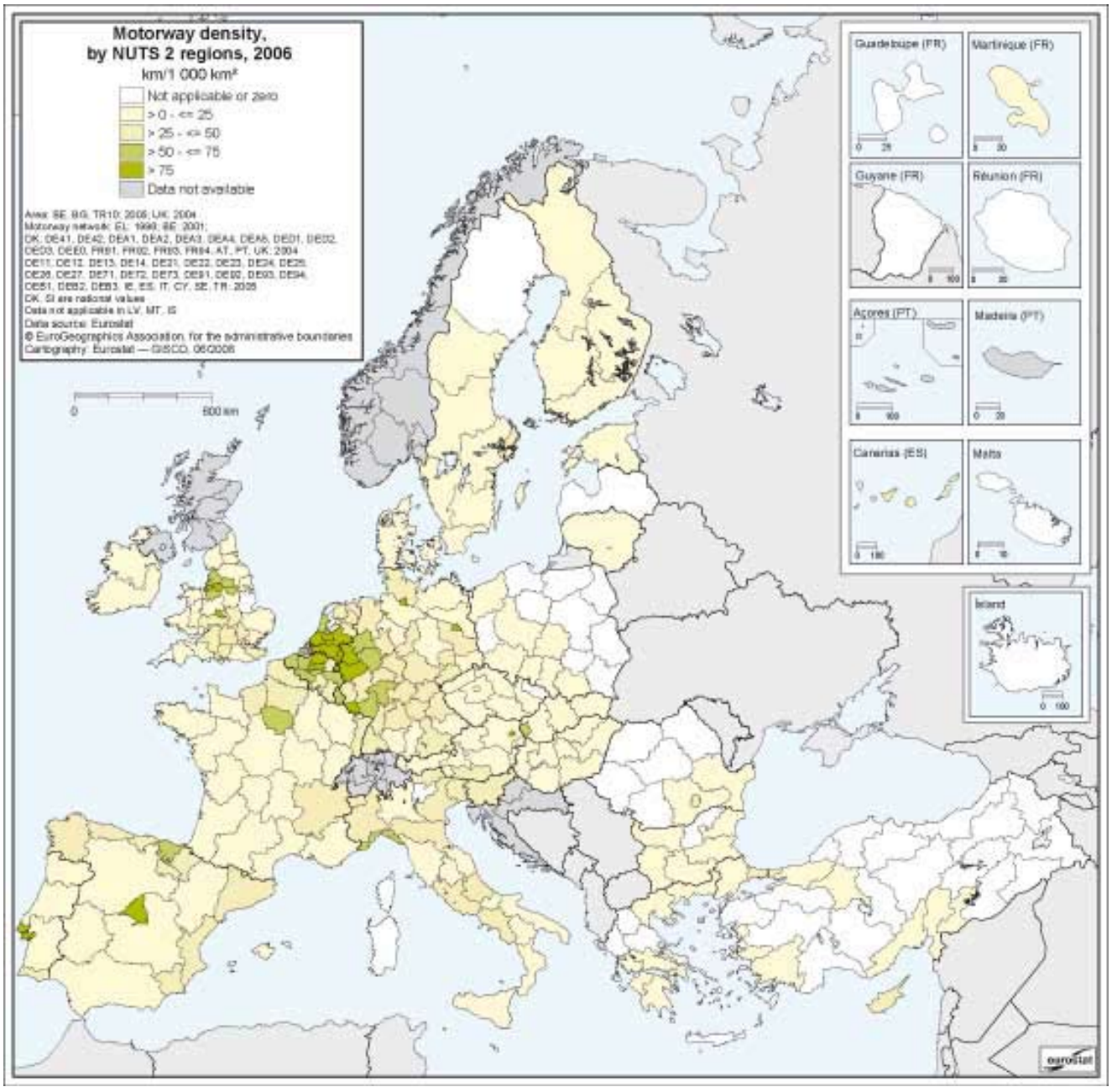
The regional pattern of the distribution of physical railway infrastructure is shaped by economic development, specific historical developments and the geographical characteristics of the regions. As a legacy from the socialist era, the countries in central and eastern Europe have retained a more concentrated rail network than their western counterparts, while at the same time having a substantially less developed motorway network. Although these countries — with the support of the EU (e.g. through the Phare programme and the Structural Funds) in addition to national efforts — have made substantial changes in their transport policy since the beginning of the 1990s, their infrastructure landscape still reveals differences.

Map 9.2 illustrates the density of railway lines per unit of territory in Europe.

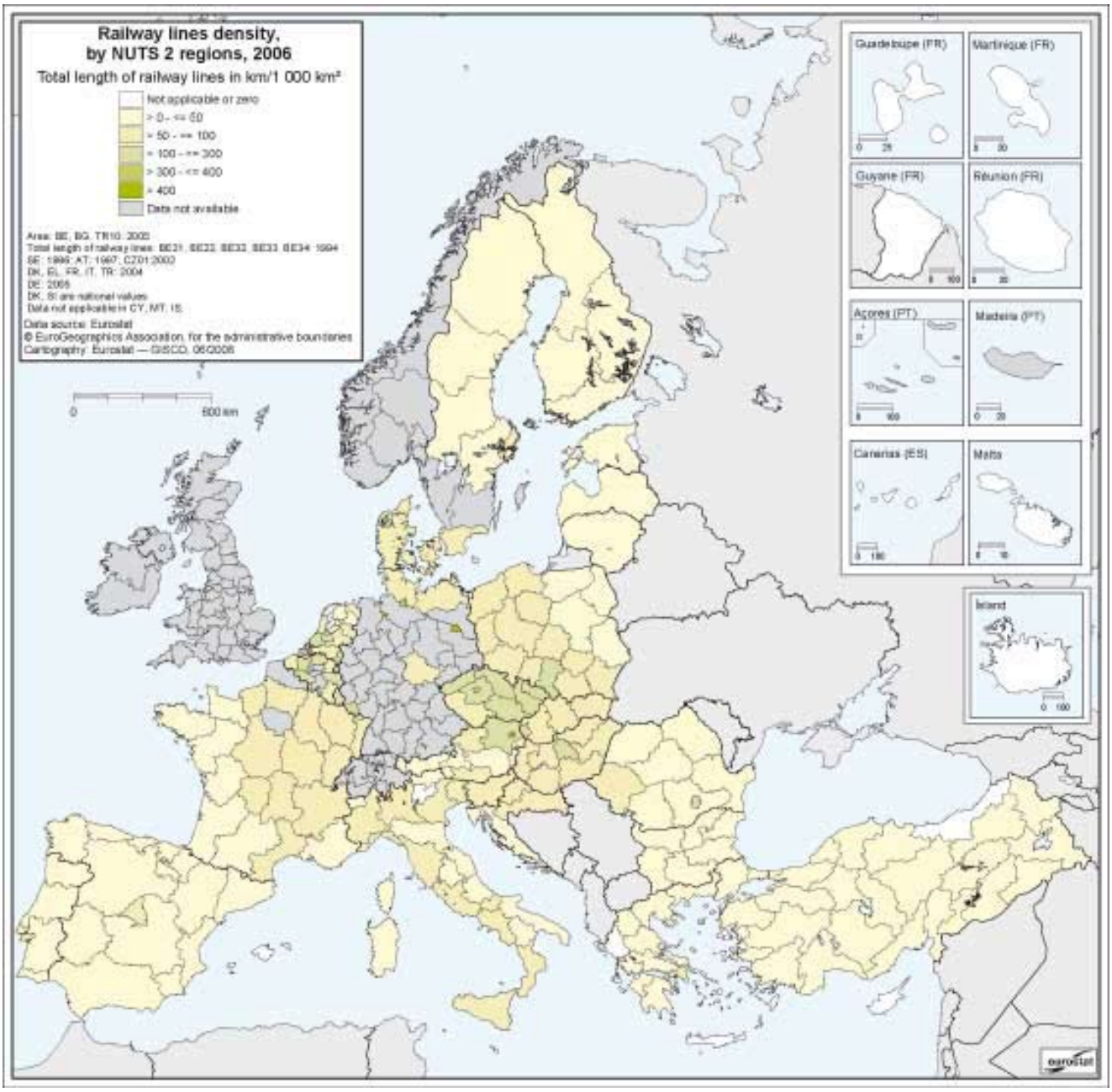
- In general, the network-to-area ratio for railway lines at national level is high in central Europe (including the Benelux countries, Germany, the Czech Republic and Poland) and lower in the peripheral countries (including Scandinavia, the Iberian peninsula, western France, the Baltic countries, Turkey and Bulgaria). The highest network density can be found in the Czech Republic, Belgium, Luxembourg and Germany (above 100 km/1 000 km²), followed by Hungary, Austria, Poland, the United Kingdom, the Netherlands and Slovakia (65–80 km/1 000 km²). At the lower end of the range are Norway, Finland, Turkey, Greece and the Baltic States, with values of 20 km/1 000 km² and below. While the significant differences in population density between the countries account for most of the differences observed, the relatively high values for the Czech Republic, Slovakia, Hungary and Poland exemplify the still strong relevance of the socialist heritage for Europe's infrastructure landscape of today.

- When rail network density is measured by population instead of territory, the overall picture changes. The highest supply of railway infrastructure per inhabitant is in the Scandinavian countries and Latvia. The new Member States in central Europe follow some way behind, while by far the lowest values are found in Turkey, the Netherlands and the United Kingdom. For Scandinavia, the sheer vastness of the country requires high levels of investment per inhabitant in railway lines in order to ensure a sufficient degree of rail accessibility for their population. Furthermore, it has to be remembered that the way in which the railway lines are operated differs significantly between countries with low and high population densities respectively. While the level of service is comparatively low in countries with a high rail infrastructure supply per inhabitant, countries with a high population density, like the Netherlands and Germany, operate their rail infrastructure using highly complex rail traffic management systems in order to meet the high level of demand on their heavily used railway network.
- There are also other differences between rail transport systems that are due to the spatial distribution of population within countries. As an example, the French system can be described as a kind of 'hub-and-spoke' system, with Paris at its centre, while in Germany the degree of direct connectivity between population centres is significantly higher, reflecting Germany's more even population distribution. This results in a more complex railway network.
- In many central and eastern European countries, since 1990, there has been a significant drop in rail freight transport in terms of both total volume and modal share. By contrast, road transport volumes have surged ahead. This development can be regarded as part of the economic and social transformation process undergone by the countries which joined during the last two enlargements. As a result, the density of the railway network decreased in some countries — a phenomenon which was not seen in the case of any national motorway network. A particularly striking reduction in rail infrastructure supply was seen in Poland, where the railway density dropped from 84 km/1 000 km^2 in 1990 to 74 km/1 000 km^2 in 1998 and then to 65 km/1 000 km^2 in 2006. Data on regional rail infrastructure supply in Poland have been available since 1998. The most striking reductions between 1998 and 2006 took place in Dolnośląskie (– 27 %, 2006: 75 km/1 000 km^2), Lubelskie (– 26 %, 2006: 42 km/1 000 km^2), Warmińsko-Mazurskie (– 22 %, 2006: 128 km/1 000 km^2) and Wielkopolskie (– 20 %, 2006: 103 km/1 000 km^2), compared with a decline of 13 % for Poland as a whole over the same period. Most of these regions had high-density networks in 1990. An exception is the Śląskie region, where the legacy of a high-density rail network has actually been significantly extended since 1998 (+ 16 % in 2006: 174 km/1 000 km^2).
- With respect to passenger transport, the most important recent development is the ongoing expansion of the high-speed rail network. While this development is not reflected in the railway density indicator, it does account for major recent investment in railway infrastructure.
- Turning to the individual regions, the densest rail networks are in the capital regions: Berlin (681 km/1 000 km^2), Wien (434 km/1 000 km^2) and Praha (385 km/1 000 km^2). While these central European capitals have indeed had a traditionally strong railway infrastructure, the strikingly high values are due to the small size of these regions within the European NUTS 2 classification and the fact that the density of urban infrastructure tends to be much higher than the density of inter-urban roads and railway lines.
- Next among the top-ranking regions come Bremen (416 km/1 000 km^2) and Hamburg (373 km/1 000 km^2), two more small NUTS 2 regions where extensive freight lines to and from the seaports contribute to the high ratios. Like the capital cities mentioned above, these two Hanseatic cities, which are also German federal states, are much smaller than regions like Zuid-Holland and Prov. Antwerpen, with their competing ports of Rotterdam and Antwerpen. These differences make it hard to draw direct comparisons with the infrastructure supply at the North Sea ports.
- Freight lines also play an important role in some traditional regions with coal and steel industries, like the Saarland in western Germany (142 km/1 000 km^2) and Śląskie in the south-west of Poland (174 km/1 000 km^2). Interestingly, Śląskie is, as mentioned above, also the only Polish region with significant recent net additions to its rail network. Thus, the development of rail infrastructure in Śląskie runs counter to the general development in Poland, although this can probably be attributed to the strong economic development in this region.

Map 9.1: Motorway density, by NUTS 2 regions, 2006
Km/1 000 km²



Map 9.2: Railway lines density, by NUTS 2 regions, 2006
Total length of railway lines in km/1 000 km²



- Further individual regions with a high railway density are Comunidad Valenciana in Spain, Lisboa in Portugal and Bucureşti — Ilfov in Romania.

Road safety

Currently, road mobility still comes at a high price in terms of lives lost. In 2006, about 43 000 people lost their lives in road accidents within the EU-27, which is more than 20 times the combined total of fatalities in rail and air transport. Given the growing concern of European citizens over road safety, the European Union has made this issue a priority of its common transport policy, as set out in the 2001 White Paper on transport 'Time to decide' and its mid-term review in 2006 (*Keep Europe moving — Sustainable mobility for our continent*). In that White Paper, the European Commission proposed to reach the target of halving the number of road fatalities between 2000 and 2010. To achieve this objective, a number of actions have been taken, including the introduction of higher vehicle safety standards, improvement of the quality of road infrastructure and the extension of the regulations concerning traffic, as well as an enforcement of existing regulations and improved education of drivers. As a result, and despite the significant growth in European road traffic volumes, it has been possible to reduce the total road death toll by 44 % between 1991 and 2006, and by 23 % since the year 2000. While this positive trend can be seen across all countries, there are significant variations between the European regions in terms of the relative risk of fatal road accidents.

Map 9.3 shows the number of deaths in road traffic accidents per million inhabitants by NUTS 2 region in 2006.

- National totals, taken from the CARE database (see Methodological notes), show that the lowest recorded numbers of road fatalities per million inhabitants are in the Netherlands (45 fatalities per million inhabitants), Switzerland (50), most German regions — especially for the 'former' federal states in the west – (Germany: 63), Sweden (49) and Norway (53), the majority of regions in the UK (54) and the south of Italy. Furthermore, the relative number of fatal road accidents at regional level is comparably low in major agglomeration areas and European capitals such as Wien (20 fatalities per million inhabitants), Berlin (22), Inner London (26), Hamburg (16), Düsseldorf (30), Stockholm (31), Zuid-Holland (35) Köln (37), Île-de-France (41), Madrid (47), Lisboa (48) and Praha (58). The fatality rates in the more rural areas surrounding the agglomerations are always significantly higher.
- The highest rates of road deaths are to be found in the eastern and south-eastern Member States. Lithuania has the highest fatality rate (223 fatalities per million inhabitants), followed by Latvia (177), Estonia (164), Greece (159), Slovenia (140), Poland (137), Slovakia (130), Bulgaria (124) and Romania (115). Given the still lower level of vehicle ownership in most of these countries, the reasons behind these high values — compared with western Europe — can probably be found in the quality of infrastructure supply and a less developed awareness of road safety issues in these countries. Especially striking are the high fatality rates in Greece, which are by far the highest in the EU-15.
- It is noticeable that, statistically, the numbers of road deaths are particularly low for many regions with high traffic volumes. This is valid especially for most regions in western Germany, for the Netherlands and the southern part of England. A closer look at this phenomenon reveals that many of these regions also tend to have a high motorway density. In general, motorways are much safer than secondary roads. Given that it is mainly transit traffic that uses existing motorways, the number of road fatalities in these regions is relatively low, despite high total traffic volumes. In fact, high transport volumes also cause congestion, which reduces average speeds and therefore also the likelihood of fatalities when accidents do occur. Finally, the quality of the roads in these countries is especially high, thus contributing to a low number of accidents.
- In contrast, high fatality rates are found in regions with a low motorway density such as the north-eastern part of Germany, Mecklenburg-Vorpommern (109) and Brandenburg (103), as well as the Baltic States, the whole of Poland, the Czech Republic, Hungary (103), and many rural areas in France and the Iberian peninsula. These data strongly underline the fact that the high proportion of traffic using motorways is a factor behind the low number of road fatalities in many regions.
- In addition to the share of the total road network accounted for by motorways, the significant reductions in the number of road deaths are also

due to a combination of high in-vehicle and out-of-vehicle safety standards, speed regulations and a general 'safety culture', including the quality of the emergency and health systems.

- The relatively low number of fatal road accidents in most of the major European cities can be explained by the higher proportion of public transport and other modes of transport, such as bicycle and pedestrian traffic. While road accidents in general are more frequent in city traffic, driving at lower speed reduces the probability of serious injuries. However, an increase in the number of accidents involving non-motorised travel may also lead to an increase in the number of serious injuries. Thus, the combined effect of lower speed and more accidents involving less protected traffic participants is not clear-cut.
- Physical geography might be another reason for the differences in per-inhabitant fatality levels. Driving in mountainous regions like the Alps, the Pyrenees and the Carpathian Mountains is probably more dangerous than in flat areas, and therefore leads to an increased number of accidents and fatalities. In addition, these regions attract a high volume of tourist traffic, thus increasing local traffic and hence the number of reported accidents per inhabitant.
- Some of the French overseas regions like Guadeloupe, Martinique and Guyane have a relatively high percentage of road fatalities per inhabitant. Possible reasons include a high proportion of motorcycle traffic and poor road quality in these regions.

Air transport

The rapid growth of air transport has been one of the most important transport sector developments in Europe and throughout the world. Since 1995, intra-EU and domestic passenger air transport increased by more than 50 %. While the events of 11 September 2001 led to a decline in 2002, growth rates resumed thereafter. There is no doubt that the completion of the liberalisation of the air transport market in the European Union contributed significantly to this development, most noticeably through the massive expansion of low-cost airlines, which also led to a remarkable growth of smaller, regional airports, which are less congested and have lower landing fees than large airports in the capital regions.

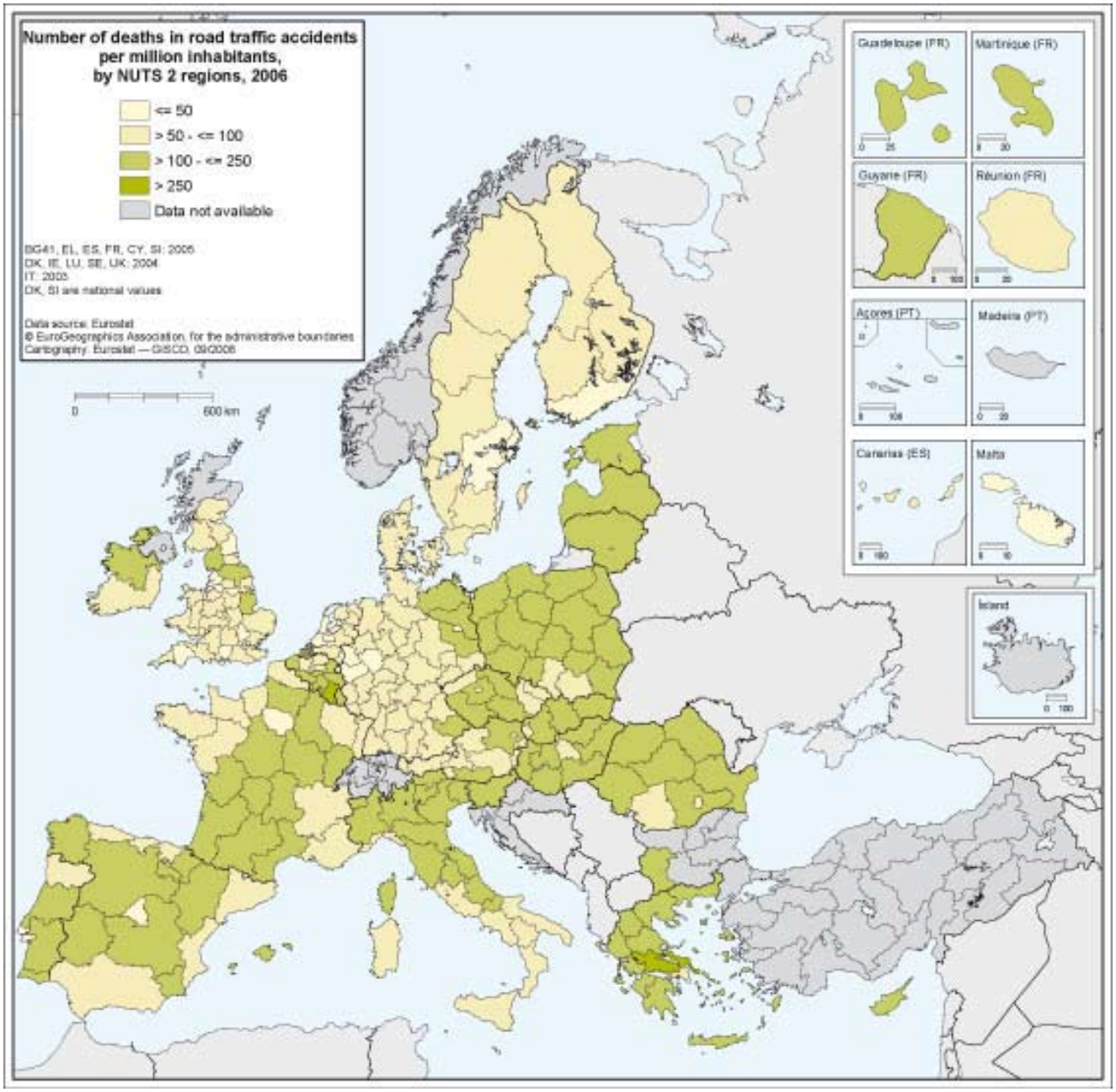
Eurostat's statistical databases contain air transport statistics at a regional level for passengers and freight. These series show passenger and freight movements over NUTS 2 regions measured in thousands of passengers and tonnes, respectively. The passenger data are divided into passengers embarking, disembarking and in transit. The freight statistics data are divided into tonnes of freight loaded and unloaded. Two series are available here, based on different methodologies. The series going back to 1978 ended with reference year 1998 and was replaced by a new time series with different definitions as from 1999.

Currently, data on air transport are collected under Regulation (EC) No 437/2003 of the European Parliament and the Council on statistical returns in respect of the carriage of passengers, freight and mail by air. This regulation provides for the collection of detailed monthly data for airports handling more than 150 000 passengers per year. For airports handling fewer than 150 000 but more than 15 000 passengers, only aggregated annual data are required, whereas for minor airports no data need to be provided. The data collected at airport level are then aggregated at regional NUTS 2 level.

In this section on air transport, the focus is on the total number of passengers and the total number of tonnes loaded and unloaded in the European top 30 NUTS 2 regions. Table 9.1 and Table 9.2 show the top 30 regions with the highest number of air passengers and with the highest volume of air freight in 2006.

- In air passenger transport, the top-ranking regions in terms of the total number of passengers are the capital regions of western Europe. The list is headed by Île-de-France, with a total number of 82.1 million passengers for the airports Paris-Charles de Gaulle and Paris/Orly, followed by Outer London (Heathrow airport) with 67.3 million passengers, Darmstadt with the Frankfurt/Main airport (52.4 million), Noord Holland (Amsterdam/Schiphol: 46.0 million) Comunidad de Madrid (45.1 million) and Lombardia with several airports geographically spread (36.7 million).
- The big airports in and around western Europe's capitals also serve as central hubs for intercontinental air traffic. This is especially true for the Heathrow (London), Charles-de-Gaulle (Paris), Frankfurt/Main and Schiphol (Amsterdam) airports.
- In addition to the important capital regions, high air passenger transport volumes can also be observed for Cataluña, Canarias and Oberbayern

Map 9.3: Number of deaths in road traffic accidents per million inhabitants, by NUTS 2 regions, 2006



(München). The high passenger volumes for the south of Spain can be explained to a great extent by tourist traffic.

- Although this is not visible from Table 9.1, a significant number of smaller, regional airports are among the fastest-growing airports because of the ongoing success of low-cost carriers.
- Among the top 30 airports for passenger transport the Praha region, with + 55 %, shows the strongest growth since 2003, followed by Cataluña (+ 41 %), Southern and Eastern in Ireland (+ 35 %), Niederösterreich (+ 32 %), Comunidad Valenciana (+ 31 %), Andalucia and Lisboa (+ 29 %), Oberbayern with München (+ 28 %) and Comunidad de Madrid (+ 27 %). The strong development of air passenger transport at the airports of the Iberian peninsula is especially noteworthy. It is not surprising that the biggest airports do not show the fastest growth, since they are already starting from a high base and are often operating near to maximum capacity. However, the picture may change in the near future due to significant extensions of capacity, e.g. at London Heathrow airport or the Berlin-Schönefeld airport.
- For air freight transport, Darmstadt (Frankfurt/Main) leads the list of the top 30 European regions with 2.12 million tonnes, followed by Noord-Holland (Amsterdam/Schiphol: 1.57 million tonnes), Île-de-France (Paris: 1.42 million tonnes) and Outer London (Heathrow: 1.34 million tonnes). Volumes at other European airports are significantly smaller, indicating that the biggest European airports serve as the main European hubs for air freight transport. Relatively high volumes can also be observed in four other regions, namely: Prov. Vlaams Brabant (Bruxelles: 0.71 million tonnes), Köln (Köln-Bonn: 0.69 million tonnes), Luxembourg (0.63 million tonnes) and Lombardia (Milano/Bergamo/Brescia: 0.60 million tonnes).
- While the total volume of air freight transport is limited by comparison with the much higher volumes on road, rail, inland waterways and especially maritime transport, air freight transport is very important for articles with high added value, perishable goods (especially food) and also express parcels, and its importance is steadily growing.
- While air freight transport is dominated by the big airports, the most dynamic growth was at the regional airports of Frankfurt-Hahn in the Koblenz region of Germany and at the airports in Southern and Eastern Ireland. Both regions enjoyed growth of over 200 % between 2003 and 2006. However, the respective reasons behind this development are different. While the growth of the relatively young airport of Frankfurt/Hahn underlines its growing importance, due to the untapped potential of the airport itself, the dynamic development of air transport in Ireland is closely connected to Ireland's strong economic growth.

Conclusion

The data shown in the three maps and two tables presented in this chapter reveal a number of interrelationships between regional economic and geographical characteristics and the structure of the European transport system. It has been possible to identify a close relationship between the provision of motorways and road safety. Basic figures on the regional distribution of air transport have also been provided. However, the data presented in this chapter represent only a part of the wider set of regional transport statistics available in Eurostat's statistical databases. Regional transport statistics show patterns of variation across regions where transport-related variables are often closely related to levels of economic activity. As already mentioned, transport policies are at the very heart of efforts to reduce regional inequality and improve regional cohesion. In an enlarged Europe, economic and infrastructure disparities are now more evident than before. One of Eurostat's long-term objectives is to expand the current regional transport indicators in order to provide a better understanding of the impact of transport policies on economic growth, transport needs and the environment.

Table 9.1: Top 30 NUTS 2 regions with highest number of air passengers in 2006 and index 2003 = 100
1 000 passengers carried

Ranking	NUTS	Region	Airports contributing by NUTS 2 region	Total passengers in 2006 1 000 passengers	Index 2003 = 100
1	FR10	Île de France	Paris-Charles De Gaulle Paris/Orly	82 052.2	116
2	UKI2	Outer London	London Heathrow Biggin Hill	67 339.3	107
3	DE71	Darmstadt	Frankfurt/Main	52 402.7	109
4	NL32	Noord-Holland	Amsterdam/Schiphol	45 998.0	116
5	ES30	Comunidad de Madrid	Madrid/Barajas	45 063.8	127
6	ITC4	Lombardia	Milano/Malpensa Bergamo/Orio Al Serio Milano/Linate Brescia/Montichiari	36 719.5	125
7	ES51	Cataluña	Barcelona Girona/Costa Brava Reus	34 852.6	141
8	UKJ2	Surrey, East and West Sussex	London Gatwick	34 080.1	114
9	ITE4	Lazio	Roma/Fiumicino Roma/Ciampino	33 804.5	124
10	DE21	Oberbayern	München Oberpfaffenhofen	30 607.4	128
11	ES70	Canarias (ES)	Las Palmas/Gran Canaria Tenerife Sur/Reina Sofia Arrecife/Lanzarote Puerto Del Rosario/ Fuerteventura Tenerife Norte Santa Cruz De La Palma Hierro	30 048.6	107
12	ES53	Illes Balears	Palma De Mallorca Ibiza Menorca/Mahon	28 822.0	114
13	IE02	Southern and Eastern	Dublin Cork Shannon Kerry	26 807.9	135
14	UKH3	Essex	London Stansted Southend	23 709.4	127
15	DK (*)	Denmark	København/Kastrup Billund Aalborg Aarhus Bornholm Karup Esbjerg Soenderborg København/Roskilde Thisted	22 965.7	109
16	UKD3	Greater Manchester	Manchester	22 123.8	113
17	ES61	Andalucia	Malaga Sevilla Jerez Granada Almeria	20 279.5	129
18	SE11	Stockholm	Stockholm/Arlanda	19 490,3	117

			Stockholm/Bromma		
19	CH04	Zürich	Zürich	19 298.5	114
20	DEA1	Düsseldorf	Düsseldorf Niederrhein Essen/Mülheim Mönchengladbach	17 092.0	121
21	AT12	Niederösterreich	Wien-Schwechat	16 808.3	132
22	FR82	Provence-Alpes-Côte d'Azur	Nice-Cote D'Azur Marseille-Provence Toulon-Hyères Avignon-Caumont Cannes-Mandelieu La Mole	16 624.8	111
23	BE24	Prov. Vlaams Brabant	Bruxelles/National	16 592.5	110
24	GR30	Attiki	Athens	15 076.4	123
25	ES52	Comunidad Valenciana	Alicante Valencia	13 803.8	131
26	DE30	Berlin	Berlin-Tegel Berlin-Tempelhof	12 392.5	108
27	FI18	Etelä-Suomi	Helsinki-Vantaa Turku Lappeenranta Helsinki-Malmi Utti Immola	12 368.3	125
28	PT17	Lisboa	Lisboa	12 280.6	129
29	DE60	Hamburg	Hamburg Hamburg-Finkenwerder	11 873.7	127
30	CZ01	Praha	Praha/Ruzyne	11 513.0	155

(*) For Denmark national totals are used and the index = 100 refers to the year 2004.

Table 9.2: Top 30 NUTS 2 regions with highest volume of air freight in 2006 and index 2003 = 100
1 000 tonnes of total goods loaded and unloaded

Ranking	NUTS	Region	Airports contributing by NUTS 2 region	Total goods in 2006 1 000 tonnes	Index 2003 = 100
1	DE71	Darmstadt	Frankfurt/Main	2 117.9	129
2	NL32	Noord-Holland	Amsterdam/Schiphol	1 566.7	116
3	FR10	Île de France	Paris-Charles De Gaulle Paris/Orly	1 416.4	111
4	UKI2	Outer London	London Heathrow	1 342.6	103
5	BE24	Prov. Vlaams Brabant	Bruxelles/National	713.5	118
6	DEA2	Köln	Köln/Bonn Bonn-Hangelar	691	130
7	LU00	Luxembourg (Grand-Duché)	Luxembourg	633.7	105
8	ITC4	Lombardia	Milano/Malpensa Bergamo/Orio Al Serio Milano/Linate Brescia/Montichiari	602.4	128
9	ES30	Comunidad de Madrid	Madrid/Barajas	344.2	116
10	BE33	Prov. Liège	Liege/Bierset	323.2	:
11	UKF2	Leicestershire, Rutland and Northants	Nottingham East Midlands	298.3	126
12	CH04	Zürich	Zürich	265.5	102
13	UKH3	Essex	London Stansted Southend	241.4	119
14	DE21	Oberbayern	München Oberpfaffenhofen	238.1	146
15	UKJ2	Surrey, East and West Sussex	London Gatwick	219.9	94
16	AT12	Niederösterreich	Wien-Schwechat	201.8	159
17	ITE4	Lazio	Roma/Fiumicino Roma/Ciampino	162.4	89
18	UKD3	Greater Manchester	Manchester	150.3	120
19	IE02	Southern and Eastern	Dublin Shannon Cork Kerry	132	317
20	FI18	Etelä-Suomi	Helsinki-Vantaa Turku Lappeenranta Utti Helsinki-Malmi Immola	126.7	143
21	DEB1	Koblenz	Frankfurt-Hahn Koblenz-Winningen	113.2	306
22	GR30	Attiki	Athens	102.4	78
23	ES51	Cataluña	Barcelona Girona/Costa Brava Reus	98.4	159
24	PT17	Lisboa	Lisboa	98.2	105
25	ES70	Canarias (ES)	Las Palmas/Gran Canaria Tenerife Norte Tenerife Sur/Reina Sofia Arrecife/Lanzarote Puerto Del Rosario/ Fuerteventura Santa Cruz De La Palma Hierro	70.7	104
26	HU10	Közép-Magyarország	Budapest/Ferihegy	64.9	129

27	FR82	Provence-Alpes-Côte d'Azur	Marseille-Provence Nice-Cote D"Azur Toulon-Hyères Avignon-Caumont Cannes-Mandelieu La Mole	62.5	91
28	IS00	Ísland	Keflavik	61.8	146
29	DEA1	Düsseldorf	Düsseldorf Essen/Mulheim Niederrhein Mönchengladbach	59.3	124
30	FR62	Midi-Pyrénées	Toulouse Blagnac Tarbes Lourdes Pyrenees Rodez-Marcillac Castres-Mazamet	59.3	110

Methodological notes

Eurostat collects, compiles and disseminates a variety of regional indicators. Data on road and railway infrastructures, inland waterways, vehicle stocks and road accidents are currently collected by Member States and candidate countries on a voluntary basis via annual questionnaires, while data on road, maritime and air transport for passengers and goods are directly derived from data collection required by law. In addition, data on journeys made by vehicles are derived from a specific study of road transport data.

In Eurostat's statistical database, information on the regional infrastructure supply of roads, railway lines and inland waterways is available at the NUTS 2 level. The road network is divided into motorways and other roads. Railway links are classified according to two criteria: the number of tracks and whether or not they are electrified. Inland waterways include navigable rivers and canals, as well as lakes. However, up to now, the varying transport quality of these links (e.g. the capacity per link) has not been reflected in the data Eurostat receives from the Member States.

Regional transport indicators are readily available on Eurostat's website under the 'Transport' theme and are mirrored in the 'General and regional statistics'. There are 18 tables for transport data, which cover infrastructure, the vehicle fleet, journeys by road, sea and air (with separate tables for freight and passengers, in each case) and road safety (as reflected in numbers of deaths and injuries in road accidents). All data are annual, with time series going back to the reference year 1978 for transport infrastructures, air and maritime transport; for road safety data, the series start from 1988.

Due to the intrinsic nature of transport, a spatial breakdown is built into most legislation dealing with the collection of transport flow statistics, which allows us to derive regional indicators for maritime and air transport directly. Moreover, other regional transport indicators on transport flows can be found under the separate areas of 'Transport', namely: 'Road transport', 'Railway transport' and 'Inland waterway transport'. Further information on transport flows between airports and ports can be also obtained under the 'Maritime transport' and 'Air transport' headings.

In order to demonstrate the potential of transport statistics for analysing regional patterns, this year's contribution focuses on the data on regional transport infrastructure provision, road safety and air transport — the latter being derived from the data collections required by legislation. In order to visualise the regional infrastructure supply, a density indicator has been provided which divides the total length of the motorway and railway network within a region by the region's area. Regional road safety was addressed by dividing the number of fatalities in road transport by the number of inhabitants per region. In contrast to the data on persons injured, the data on road casualties are comparable across Europe. Regional air transport volumes are expressed as the total number of air passengers embarking, disembarking and in transit, and tonnes of freight loaded and unloaded at the airports of the regions. The data are derived from the data provided by the airports. The precise definitions of all variables used can be found in the publication *Glossary for transport statistics* (http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1073,46587259&_dad=portal&_schema=PORTAL&p_product_code=KS-BI-03-002).

The basic data used in the maps and tables above have been extracted from Eurostat's website, although not all the derived indicators can be found directly on Eurostat's website. The aim here is to provide added value over and above the data already available to the public on the website. Further information can be found in *Statistics in focus* and *Panorama of transport* publications and in the European Road Accident Database CARE (Website: http://ec.europa.eu/transport/care/). This is a Community database on road accidents resulting in death or injury. CARE contains detailed data on individual accidents as collected by the Member States.